

R E M A R K S

This is a response to the final Office Action mailed December 12, 2003, with a shortened statutory response period ending on March 12, 2004. This response is filed within the statutory response period. A Request for Continued Examination accompanies this response. The Commissioner is hereby authorized to charge any additional fees to Deposit Account number 02-1818. Applicants invite the Examiner to call Applicants' Representative to discuss any issues with this application.

Applicants respectfully request reconsideration and allowance of the pending claims in view of the Amendments and Remarks below.

1. Status of the Claims

Claims 1-20, 22-23, 25-26, 28, 39-45, and 61-67 are pending in this application. Claims 21, 24, 27, 29-38, 46-60, have been canceled. Claims 1-10, 14-20, 22-23, 25-26, 28, and 39-40 have been amended. New claims 61-67 have been added. Support for these amendments and new claims may be found in the application at page 2 line 29 through page 7 line 4.

2. § 112 Rejections

Claims 1-60 were rejected under 35 U.S.C. §112, 1st paragraph, as the recitation "consisting essentially of" in independent claims 1, 18, 39, 46, was considered not described in the specification so as to reasonably convey to the skilled artisan that the inventor had possession of the claimed invention at the time the application was filed. The term "consisting essentially of" has been removed from the aforementioned claims rendering this rejection moot.

Claims 1-60 were rejected under 35 U.S.C. §112, 1st paragraph, as the specification allegedly provides no guidance to the recitation "having a DSC melting point of 100°C or lower..." set forth in independent claims 1, 18, 29, 39, and 46. Applicants respectfully traverse this rejection. The specification provides an explicit example of a multiple-layered structure utilizing an ethylene/α-olefin copolymer having a DSC melting point lower than 100°C. The example set forth at page 6 line 30 through page 7 line 4 states that Dow Affinity 1880 is the second layer. One of ordinary skill in the art would readily recognize that Dow Affinity 1880 is an ethylene/α-olefin copolymer having a DSC melting point lower than 100°C. See Affinity PL 1880 product specification sheet set forth at the Appendix. As the present specification provides a specific example of a multi-layered structure having a layer composed of an ethylene/α-olefin copolymer having a DSC melting point of 100°C or lower, the specification clearly provides guidance to this term. Claims 1, 19, 39, 67, and claims dependent therefrom

are therefore in compliance with §112. Applicants respectfully submit that the amendments do not narrow the scope of the claims or surrender any claimed subject matter. In view of the foregoing amendments and remarks, Applicants respectfully request that the §112 rejections be withdrawn.

3. Prior Art Rejections

Claims 1-3, 6-10, 14-17, 46-49, 53-56 and 59-60 were rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,993,949 to Rosenbaum et al. (*Rosenbaum*). Claims 1-10, 14-15, 17, 46-49, 54 and 56-60 were rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,500,505 to Piper et al. (*Piper*). Claims 1-9 were rejected under 35 U.S.C. §102(e) in view of U.S. Patent Application Publication No. 2002/0115795 to Shang et al. (*Shang*). Claims 10, 14-21, 25-31, 35-41 and 45 were rejected under 35 U.S.C. § 103(a) as being obvious over *Shang* in view of U.S. Patent No. 6,479,116 to Small et al. (*Small*). Claims 11-13 and 50-52 were rejected under 35 U.S.C. §103(a) as being obvious over *Rosenbaum* in view of U.S. Patent No. 4,487,885 to Adur et al. (*Adur*). Claims 11-13 and 50-52 were rejected under 35 U.S.C. §103(a) as being obvious over *Piper* in view of *Adur*. Claims 11-13, 22-24, 32-34, 42-44 and 50-52 were rejected under 35 U.S.C. §103(a) as being obvious over *Shang* and *Small* and claims 10, 14-21, 25-31, 35-41 and 45 further in view of *Adur*. Applicants respectfully traverse these rejections as *Rosenbaum*, *Piper*, *Shang*, *Small* and *Adur*, either alone or in combination, fail to teach or suggest the subject matter recited in the present claims.

Rosenbaum and *Shang* fail to teach or suggest a multiple-layer structure having an exterior layer composed solely of an ethylene/C₄-C₈ α -olefin as recited in independent claims 1, 18, 39, 46 and 67, for example. Each of *Rosenbaum*'s skin layer, RF layer and core layer is blend of multiple polymeric materials. *Rosenbaum*, col. 4 lines 48-57, col. 6 lines 37-46 and col. 9 lines 1-5.

Similarly, *Shang* fails to teach or suggest a multiple-layer structure having an exterior layer composed solely of an ethylene/C₄-C₈ α -olefin. The ethylene/ α -olefin component present in the *Shang* structure is merely one component of a two component polymeric blend. *Shang* ¶¶68-83. Thus, no layer of the *Shang* structure is composed solely of an ethylene/ α -olefin copolymer.

Piper also fails to teach or suggest an exterior first layer composed solely of a polyamide or a polyester and an exterior second layer composed solely of an ethylene/C₄-C₈ α -olefin as recited in the present claims. In every instance wherein a polyamide or a polyester constitutes

an exterior layer (i.e., *Piper* layers C, D/D', or E/E' as an exterior layer), the other layer in the *Piper* structure is a propylene/ethylene copolymer (i.e., *Piper* layer A). *Piper*, col. 9 lines 19-47, col. 12 line 66-col. 16 line 8. *Piper* has no teaching, suggestion or motivation of a multiple-layer structure having an ethylene/C₄-C₈ α -olefin copolymer exterior layer (*Piper* layer B) and a polyamide or a polyester exterior layer (*Piper* layer C, D/D' or E/E'). Thus, *Piper* suggests that when a polyamide or a polyester constitutes one exterior layer, the multiple layer structure must have a propylene-based copolymer as the other exterior layer. See *Piper*, col. 9 lines 19-29.

Small teaches away from a multiple layered structure having a layer of an ethylene/C₄-C₈ α -olefin copolymer having a DSC melting point of less than 100°C as recited in the present claims. Rather, the ethylene/ α -olefin layer of the *Small* structure has a DSC melting point of greater than 118°C clearly teaching away from the recited DSC melting point of 100°C or lower. *Small*, col. 1 lines 46-47. Moreover, *Small* further teaches away from a first exterior layer attached directly to a second exterior layer as recited in claims 18 and 67, for example. *Small* requires a tie layer between the first and second exterior layers. *Small*, col. 1 lines 47-51, col. 2 lines 12-17.

Regarding the obviousness rejections, the present application, application serial number 10/044,636 and U.S. Patent Publication No. 2002/0115795 to Shang et al. (*Shang*), were, at the time the invention of application serial number 10/044,636 was made, owned by Baxter International Inc. Thus, Applicants respectfully submit that *Shang* be removed as a §103 reference in accordance with 35 U.S.C. §103(c).

Moreover, no combination of *Rosenbaum*, *Piper*, *Small* or *Adur* teaches or suggests the claimed subject matter. *Rosenbaum* has no teaching or suggestion of a layer composed solely of a ethylene/C₄-C₈ α -olefin copolymer. *Piper* has no disclosure directed to a structure having an ethylene/C₄-C₈ α -olefin exterior layer as well as a polyamide or polyester exterior layer and further suggests a multiple layer structure having a first exterior layer of an ethylene/propylene copolymer and a second exterior layer of a polyester or polyamide. *Small* teaches away from an ethylene/C₄-C₈ α -olefin copolymer having a DSC melting point of 100°C or less. Teaching away is a *per se* demonstration of lack of *prima facie* obviousness. *In re Dow Chemical Co.*, 837 F.2d 469, 5 USPQ2d 1529 (Fed. Cir. 1988). *Adur* merely discloses polymeric blends having adhesive properties and fails to fulfill the deficiencies of each reference. Consequently, no combination of *Rosenbaum*, *Piper*, *Small* or *Adur* teaches, suggests or motivates the skilled artisan to contemplate a multiple layered structure having an exterior layer composed solely of a polyamide or a polyester and either 1) a second exterior layer composed solely of an

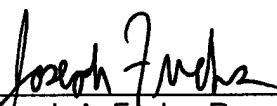
ethylene/C₄-C₈ α -olefin with a DSC melting point of 100°C or less or 2) a second exterior layer composed solely of an ethylene/C₄-C₈ α -olefin attached directly to the first layer as recited in the present claims.

C O N C L U S I O N

In view of the foregoing amendments and remarks, Applicants respectfully submit the claims 1-20, 22-23, 25-26, 28, 39-45, and 61-67 are in a condition for allowance and respectfully request an early notice of the same.

Respectfully submitted,
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AFFINITY PL 1880

Polyolefin Plastomer for Sealants in Multilayer Packaging

Melt Index:	1.0
Density:	0.902

AFFINITY[®] PL 1880 is a polyolefin plastomer (POP) produced using INSITE[®] Technology from Dow Plastics¹. It is specifically designed for use as a sealant layer in flexible structures for the packaging of meat and cheese, dry foods and con-

sumer goods. Due to its excellent sealability at low temperatures, ultimate hot tack strength, optical properties and abuse resistance, it is particularly suitable for high speed form-fill-seal packaging machines.

Note

AFFINITY PL 1880 should comply with FDA regulation 21 CFR 177.1520 and with

most European food contact regulations when used unmodified and processed according to good manufacturing practices for food contact applications.

Please contact your nearest Dow office regarding food contact compliance statements.

The purchaser remains responsible for determining whether the use complies with all relevant regulations.

Physical Properties ⁽¹⁾	Unit	Test Method	Value
Melt index, 190 °C/2.16 kg	g/10min	ISO 1133	1.0
Density	g/cm ³	ASTM D-792	0.902
Melting point	°C	DSC	100
Vicat softening point	°C	ISO 306 (method A/120)	87
Film Properties, 50 µ thickness ^(1,2)	Unit	Test Method	Value
Dart impact, method A	g	ASTM D-1709	>830
Puncture resistance		Dow Method	
Energy	J		2.1
Force	N		35
Elmendorf tear strength	g	ASTM D-1922	
MD			355
CD			500
Yield tensile strength	MPa	ASTM D-882	
MD			5.0
CD			4.9
Ultimate tensile strength	MPa	ASTM D-882	
MD			49
CD			26
Ultimate elongation	%	ASTM D-882	
MD			570
CD			560
Tensile modulus, 2% secant	MPa	ASTM D-882	
MD			64
CD			64
Optical properties			
Gloss 20°	units	ASTM D-2457	129
Haze	%	ASTM D-1003	1.1
Seal initiation temperature ⁽³⁾	°C	Dow Method	85

(1) Typical properties; not to be construed as specification limits

(2) Monolayer blown film extruded at 209 °C, BUR 2.5:1, 1.8 mm die gap

(3) Temperature required to reach 5.25 N/15mm heat seal strength; data representative of a PA/tie/sealant coex film structure

Safety Considerations

Material Safety Data Sheets for Dow Polyolefin Plastomers are available from the Dow sales office to help customers further satisfy their own safe handling and disposal needs. Such information should be requested from the supplier(s) of any product(s) prior to working with it (them).

The comments that follow are pertinent only to the resins discussed, as supplied. Various additives and processing aids used in fabrication will have their own safe use profile and must be investigated separately.

Health and Safety

Polyolefin Plastomers are among the most inert commercial polymers and constitute no hazard in normal handling from skin contact or ingestion. For "Regulated" uses, such as food contact, your Dow sales representative can obtain compliance letters for specific resins. Normal good housekeeping practice should be followed. Workers should be protected from possibility of skin or eye contact with molten polymer. Safety glasses are suggested as a minimal precaution to prevent possible mechanical or thermal injury to the eyes. Fabrication areas should be ventilated to carry away fumes or vapours; workers should be assured of a supply of fresh air. Work place environments should be kept clean and free of dust.

Combustibility

Polyolefin Plastomers will burn when supplied with adequate amounts of heat and oxygen. They should be handled and stored away from contact with direct flames and/or other ignition sources. In burning, Polyolefin Plastomers contribute high heat and may generate a dense black smoke. Fires can be extinguished by conventional means with water fog preferred. In enclosed areas, fire fighters should be provided with self-contained breathing apparatus.

Recycling

Polyolefin Plastomers can be recycled. Production rejects, and/or conversion waste should preferably be recycled instead of being disposed of.

Disposal

In disposal of any wastes, be certain all applicable national and local regulations are met. If these regulations are met, the following is applicable for the Polyolefin Plastomers as supplied. If fillers, processing aids or other materials have been added, their possible influence on handling and disposal should be judged separately.

Polyolefin Plastomers can be disposed of either by incineration or landfill. With properly controlled industrial, commercial or municipal incineration, particulate or gaseous discharge into the air can be maintained within allowable levels. Thermoplastic products such as Polyolefin Plastomers have high heat values and should be incinerated only in units designed to handle high heats of combustion. In landfill, Polyolefin Plastomers are inert, do not degrade quickly, form a strong and permanent soil base, and evolve no gases or leachates known to pollute water resources.

Customer Notice

Dow encourages its customers to review their application of Dow products from the standpoint of human health and environmental quality. To help ensure that products are not used in ways for which they are not intended or tested, Dow personnel will assist customers in dealing with ecological and product safety considerations. Your Dow sales representative can arrange the proper contacts.

Notice: The information and data contained herein do not constitute sales specifications. The product properties may be changed without notice. No liability, warranty or guarantee of product performance is created by this document. It is the Buyer's responsibility to determine whether Dow products are appropriate for Buyer's use and to ensure that Buyer's workplace and disposal practices are in compliance with applicable laws and regulations. No freedom from any patents or other industrial or intellectual property rights is granted or to be inferred. (March 1997)



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